ENGINES

BY WITHANEE MILLIGAN

Ask any kid what color a fire truck is and you are sure to get the same answer again and again: “red!” The lessor recognized and perhaps somewhat unsung fire engines by kids and adults alike are the big green engines employed by the United States Forest Service. You may see them roaming the Humboldt-Toiyabe National Forest, visiting schools and campgrounds or responding to fires all across the state of Nevada and even the nation.

The Humboldt-Toiyabe National Forest currently has fifteen engines located across seven districts in Nevada and a portion of eastern California, responsible for providing fire suppression in large response areas at a moment’s notice. They are yet another unique and integral part of the forest’s fire suppression fleet.

THE APPARATUS

The engines on the forest range in size and capability, also known as engine typing. Each type has their own set of advantages, the main difference being the amount of water the tanks carry and the rate and pressure at which they can flow that water to the fire. Choosing the right engine for the job is something Incident Commanders must do each time there is a fire. Sometimes, roads into a fire are narrow or inaccessible to the bigger engines and therefore, a smaller type engine on a pickup truck frame is better suited to maneuver and fulfill the needs of the fire.

These mean green machines are not *just* a way to deliver water to a wildfire. They also act as home away from home, carrying everything firefighters could ever need to work several days on an active incident. Each engine captain and crew customize the engine they are assigned to, outfitting it appropriately. Each truck’s inventory differs slightly, but the overall equipment and result is the same; miles of hose, portable pumps, various handtools, a variety of brass and fittings fill up several compartments. You will also find boxes of food in the form of Meals Ready to Eat (MREs), medical equipment including defibrillators and backboards, tents, and perhaps most importantly to engine crews, coffee makings.

Driving the engine takes skill and, simply put, a touch of courage. The bigger engines on the forest weigh roughly 36,000 pounds and require a commercial driver’s license (CDL) to operate. Engine operators often have to maneuver these very large and heavy vehicles on mountain roads that would make Evil Knievil flinch in order to make access to a fire. Because of this, operators are required to attend and pass Engine Academy, a rigorous 80-hour course designed to refine their driving skills in a variety of complex environments, as well as become more proficient in pumping operations. These are critical skills for any engine operator, though firefighting itself may seem like a high-risk occupation, the most dangerous activity and leading cause of death of firefighters is vehicle accidents.

THE PEOPLE

Each year, lightning is a large contributing factor to new fire ignitions. Lightning often strikes deep in the forest or on a remote mountain top inaccessible to engines, no matter how good the driver. Fortunately, the engine crew doesn't have to have the engine itself to be effective. In fact, the engine is just one tool in their fire suppression toolbox. In this instance, firefighters will grab chainsaws and handtools and hike into the fire and construct handline, removing vegetation down to bare mineral soil, to halt its spread. Highly trained and adaptable, firefighters are diversely skilled and quite used to overcoming dynamic situations however necessary to accomplish the goal, whether they have the engine or not.

This adaptability comes with the territory. Engine crews can find themselves on that remote lightning fire for weeks, while the next week they might be working to save homes on a fire located in the wildland-urban interface. They can be pulled off of their trucks and combined with other engine modules to form a 20-person handcrew. They can be on a fire in their local area or sent anywhere in the country to assist in large fire suppression. The module also has the ability to provide management of a fire, setting up the incident command system similar to a military command structure that provides accountability and a tactical plan to suppress the fire.

Most of the engines on the forest have five members assigned to them, with the exception of the type 6 engines which can operate with two to three people. The crew members have different levels of qualifications, ranging from base level firefighter to the captain, also known as the Supervisory Fire Engine Operator. Generally, engine modules consist of four permanent and one seasonal employee. These five firefighters are together all season long, seeing long hours and hard shifts, so it is not uncommon to form friendships that last a lifetime. Much of the job requires teamwork and trust in one another and is something many firefighters list as one of the top perks of the job. That, and the sunrise after an all-nighter.

A DAY IN THE LIFE

When not working on a fire, personnel spend their time preparing for one. Each morning, engine crews will arrive at their stations and do morning checks, making sure that all of the components of the engine are functioning properly. The Fire Engine Operator will test the air brakes, lights, sirens, pump, oil and tire tread, as well as make sure everything is fueled and ready to go.

After successful engine checks, the crew participates in physical training (PT), which can range from going on runs, hiking in gear, or doing a variety of calisthenics and other exercises. Each module runs their PT a little differently, but all with the same result: a high level of physical fitness that is necessary to perform the duties of the job. All wildland firefighters, no matter their position, are also required to pass a work capacity test that consists of walking three miles in under forty-five minutes while carrying a forty-five pound pack. It certainly isn't an easy task, but most would say it is the easiest thing you will ever do as a wildland firefighter. Because of that, the high fitness standard is something that is vital to the success of the team.

After PT, engine modules will take part in a morning briefing; discussing the days plan, the forecasted weather, the fuel conditions, the national wildland fire situation and various safety topics. The remainder of the day will vary and can consist of training, patrolling the forest, assisting in fire prevention and public education programs, chasing lightning strikes to look for new fires, fuels reduction projects, or doing maintenance work around the station and other areas on the Humboldt-Toiyabe National Forest.

Something every employee has their ear specifically trained for is the tone on the radio signaling a new wildfire. Should that tone sound, everyone will stop what they are doing and head for the engine, as they are one of the first resources dispatched to any new fire. It only takes a few minutes for the crewmembers to load up and be en route to the reported location.

Once on scene, they have a variety of different suppression tactics they can deploy. If the fire is close to a road, they can perform mobile attack, a technique that involves a firefighter walking out in front of the engine using a hose to cool down the fire, while the engine rolls along behind them supplying water. They can also put in what is known as a hoselay, where the engine is stationery and firefighters carry packs of hose on their back, connecting them and spraying the fire with water as they progress. They could also perform firing operations, where the use of a variety of ignition tools and methods can be used to strategically light the fuels ahead of the fire so that it slows or stops the fire's spread. If other resources are performing the firing, engines can perform what is known as "holding" operations, where they are responsible for making sure the fire being lit doesn't cross an established perimeter, such as a road. In a fire located in wildland-urban interface, engines are greatly utilized in structure protection, where they work to ensure the survival of various buildings or residences.

Every fire and every day is different working on a Humboldt-Toiyabe National Forest engine, and that is what keeps crew members coming back summer after summer. So, even though you may not see the green engines on the front page or in kid's books, they are out there, quietly protecting the forest we all love and the communities that surround it.